

CMLT6427E

**ENHANCED SPECIFICATION
SURFACE MOUNT SILICON
NPN DARLINGTON TRANSISTOR**



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DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMLT6427E is an Enhanced Specification silicon NPN Darlington transistor. High DC current gains, coupled with a low saturation voltage, make this an excellent choice for industrial/consumer applications where operational efficiency and small size are top priority.

MARKING CODE: C64

FEATURES:

- High current (500mA Max)
- High DC current gain (15K Min)
- Low saturation voltage ($V_{CE(SAT)}$ = 0.8V Max)
- High input impedance
- SOT-563 surface mount package

APPLICATIONS:

- Motor drivers
- Relay drivers
- Pre-amplifier input applications
- Voltage regulator controls

MAXIMUM RATINGS: ($T_A=25^\circ\text{C}$)

♦ Collector-Base Voltage
♦ Collector-Emitter Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Power Dissipation (Note 1)
Power Dissipation (Note 2)
Power Dissipation (Note 3)
Operating and Storage Junction Temperature
Thermal Resistance (Note 1)

SYMBOL		UNITS
V_{CBO}	60	V
V_{CES}	60	V
V_{CEO}	40	V
V_{EBO}	12	V
I_C	500	mA
P_D	350	mW
P_D	300	mW
P_D	150	mW
T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
θ_{JA}	357	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CBO}	$V_{CB}=30\text{V}$			100	nA
♦ I_{CEO}	$V_{CE}=25\text{V}$			100	nA
I_{EBO}	$V_{EB}=10\text{V}$			100	nA
♦ BV_{CBO}	$I_C=100\mu\text{A}$	60			V
♦ BV_{CES}	$I_C=100\mu\text{A}$	60			V
BV_{CEO}	$I_C=10\text{mA}$	40			V

♦ Enhanced Specification

Notes: (1) Ceramic or aluminum core PC Board with copper mounting pad area of 4.0mm²
(2) FR-4 Epoxy PC Board with copper mounting pad area of 4.0mm²
(3) FR-4 Epoxy PC Board with copper mounting pad area of 1.4mm²

R3 (29-June 2015)

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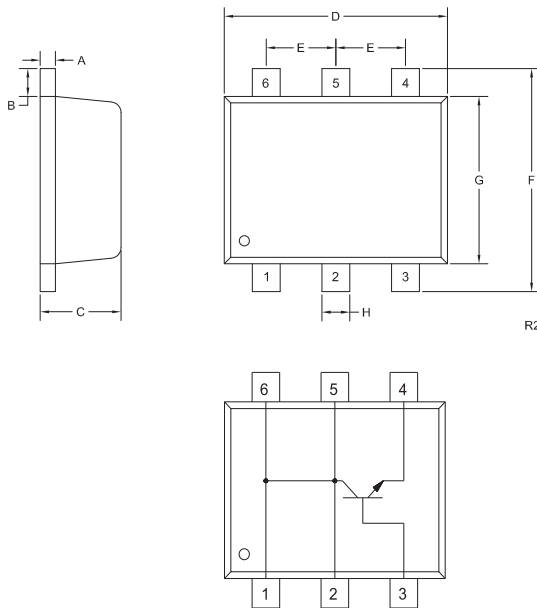


ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
♦ BV_{EBO}	$I_E=10\mu\text{A}$	14			V
♦ $V_{CE(SAT)}$	$I_C=50\text{mA}$, $I_B=0.5\text{mA}$			0.80	V
$V_{CE(SAT)}$	$I_C=100\text{mA}$, $I_B=0.1\text{mA}$			0.85	V
♦ $V_{CE(SAT)}$	$I_C=500\text{mA}$, $I_B=0.5\text{mA}$			1.0	V
$V_{BE(SAT)}$	$I_C=500\text{mA}$, $I_B=0.5\text{mA}$			2.00	V
$V_{BE(ON)}$	$V_{CE}=5.0\text{V}$, $I_C=50\text{mA}$			1.75	V
♦ h_{FE}	$V_{CE}=5.0\text{V}$, $I_C=10\text{mA}$	15K		100K	
♦ h_{FE}	$V_{CE}=5.0\text{V}$, $I_C=100\text{mA}$	25K		200K	
♦ h_{FE}	$V_{CE}=5.0\text{V}$, $I_C=500\text{mA}$	15K		140K	
f_T	$V_{CE}=5.0\text{V}$, $I_C=10\text{mA}$, $f=100\text{MHz}$		200		MHz
C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1.0\text{MHz}$			7.0	pF
C_{ib}	$V_{BE}=0.5\text{V}$, $I_C=0$, $f=1.0\text{MHz}$			15	pF
NF	$V_{CE}=5.0\text{V}$, $I_C=1.0\text{mA}$, $R_S=100\text{k}\Omega$, $f=1.0\text{kHz TO } 15.7\text{kHz}$			10	dB

♦ Enhanced Specification

SOT-563 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.0027	0.007	0.07	0.18
B	0.008		0.20	
C	0.017	0.024	0.45	0.60
D	0.059	0.067	1.50	1.70
E	0.020		0.50	
F	0.059	0.067	1.50	1.70
G	0.043	0.051	1.10	1.30
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R2)

LEAD CODE:

- 1) Collector
- 2) Collector
- 3) Base
- 4) Emitter
- 5) Collector
- 6) Collector

MARKING CODE: C64

R3 (29-June 2015)

PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
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- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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